

**THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

HUAWEI TECHNOLOGIES CO. LTD.,

Plaintiff,

v.

**T-MOBILE US, INC. and
T-MOBILE USA, INC.,**

Defendants,

**NOKIA SOLUTIONS AND NETWORKS US
LLC, NOKIA SOLUTIONS AND NETWORKS
OY, TELEFONAKTIEBOLAGET LM
ERICSSON, and ERICSSON INC.,**

Intervenors.

Civil Action No. 2:16-cv-00052-JRG-RSP

JURY TRIAL DEMANDED

**PLAINTIFF HUAWEI TECHNOLOGIES CO. LTD.'S
REPLY CLAIM CONSTRUCTION BRIEF**

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Despite admissions by Defendants that the parties do not dispute the meanings behind several disputed claim terms, Defendants confoundingly insist on their proposed constructions, which are broader than the parties' generally agreed-to understandings of the claims. Similarly, instead of agreeing to straightforward corrections of typographical errors, Defendants attempt to use the typo as a bootstrap to broaden the meaning of the term. With respect to Defendants' assertion that certain terms are means-plus-function claim elements, Defendants fail to overcome the presumption against the application of § 112, ¶ 6 for claims not expressly written in "means" type language. Their focus on these terms, which they disclosed in an untimely fashion, is misguided because, as Huawei's expert explains, the terms have readily-understood meanings that would allow persons of ordinary skill in the art to practice the claimed inventions and recognize their scope. Moreover, the terms alleged to be means-plus-function are ancillary to the inventive contribution of the inventors, and are not the focus of the claims themselves. Therefore, Huawei respectfully requests that the Court adopt its constructions.

I. Disputed Terms and Proposed Constructions

A. "restoration data" | "restoring data"

Huawei proposes that these terms be construed together as "information necessary for the S-CSCF to handle traffic for a registered user, which includes at least a SIP URL of a P-CSCF assigned for a user device and a contact address of the user device." Defendants admit their constructions are broader than Huawei's, but they ignore the ramifications of those broader constructions. Namely, Defendants' constructions could confuse the jury by rendering claim terms superfluous or redundant, and ignore the applicants' express definitions for these terms, which capture the improvement over the prior art. Huawei's constructions, on the other hand, capture the inventors' inventive contributions because they include the particular elements that the inventors recognized could be stored in an advantageous manner to improve the efficiency of 3GPP systems.

Defendants do not dispute that Huawei's constructions are necessary for the inventions to work as required to effect these advantages.

Instead, Defendants seek constructions that negate the inventive contribution of the applicants. The parties' dispute centers on Defendants' injection of the unduly broad word "used." This broader term would improperly recapture the prior art. *See Parallel Networks, LLC v. Abercrombie & Fitch Co.*, 704 F.3d 958, 968 (Fed. Cir. 2013) (adopting narrow interpretation because a broader construction would "improperly bring distinguished prior art within the scope of the claims"). In the prior art, the originally-assigned S-CSCF would gather information about the registering user device (*i.e.*, subscription data) from the HSS during initial registration. *See* Pltf. Br. at 5-6. If that S-CSCF failed or restarted, the I-CSCF would have to wait for the registration timer cycle to complete before retrying registration, and at that point, the system would once again retrieve the subscription data from the HSS while restoring connectivity through the refreshed S-CSCF or a new S-CSCF. *See id.* Accordingly, the "subscription data" of the prior art would be captured by the Defendants' "data used when restoring processing of the user service."

The applicants identified the failing in the prior art was this need to wait for a timer cycle to complete. They recognized that if ***certain additional*** data were backed up at the HSS during initial registration, then in the event of a failure or restart, the I-CSCF could immediately assign a new S-CSCF to the user device and the HSS could provide the information necessary to restore the user session without interruption. *See id.* at 6-7. The applicants explicitly define this necessary information as at least including the P-CSCF address and the contact address of the user device. Both are necessary to (1) continue the session through the user device's original P-CSCF and (2) contact the user device to maintain the session. *See id.* at 12; *see also* '617 Patent at 7:29-40 ("which is ***required*** when user processing is restored"). If restoration or restoring data is simply data that is "used" when restoring processing, then that would include the subscription data that

was already present in the prior art systems. Defendants’ construction would also render superfluous the separate claim term “subscription data,” as well as “used for restoring the service.”

Defendants’ contention that Huawei’s sole example supporting its constructions is limited to a single embodiment is incorrect. The patent expressly states that the “present invention” adds transmission of a “new information cell” that it calls “AVP User-Backup-Data.” ’617 Patent, 6:51-58. When that “cell” is defined, the applicants expressly state it “require[s]” the SIP URL of the P-CSCF assigned to the user and a contact address of the user device. *Id.* at 7:29-34. Now, the embodiments may vary as to what message flow contains this new data cell, but there is a single consistent description that it contains these data elements necessary to the invention.

Defendants also incorrectly state that “[t]he patent contains no mention of what data might be needed when the mobile device *initiates* the call.” Defs. Br. at 6. In fact, the ’617 Patent explains that when the calling user device’s S-CSCF fails, the newly-assigned or restarted S-CSCF “interrogates and acquires ***the backup data*** and the subscription data of the user from the HSS.” ’617 Patent at 8:32-34 (emphasis added). The “backup data” refers to the same data as the restoration or restoring data that the ’617 Patent claims—the data elements that the applicants realized could advantageously be backed up at the HSS during initial registration. *See* Pltf. Br. at 14. Indeed, the parties propose the same constructions for restoration and restoring data as they do for “backup necessary data” of the ’365 Patent, indicating they should be construed together. The patent therefore does define the data necessary for when a mobile device initiates a call, just as it does when it receives a call.

As to claim differentiation, Defendants ignore the first clause of Huawei’s construction, which requires these terms to reflect “information necessary for the S-CSCF to handle traffic for a registered user.” The restoration and restoring data is not simply data that is used in restoration: it is the additional data the applicants recognized is necessary for the restoration. Otherwise, the

terms would capture the described prior art and fail to reflect the improvements invented by the applicants. To the extent Defendants' claim differentiation argument has any merit, it applies only to the second clause in the construction: "which includes at least a SIP URL of a P-CSCF assigned for a user device and a contact address of the user device." These are the only elements present in Claims 4 and 10 and therefore the only portions of the limitations that are similar to those in Huawei's proposed constructions. Claim differentiation cannot support Defendants' overbroad injection of "used" into the claim construction.

**B. "necessary data which is required when a user service processing is restored"
| "necessary data" | "backup necessary data"**

The parties agree that, for the most part, the '365 Patent's terms should be construed along with the '617 Patent's terms. Defendants' constructions for the '365 Patent's terms are incorrect for the same reasons explained above with respect to the terms of the '617 Patent: they are overbroad, render other claim terms superfluous, and fail to give effect to the applicants' inventive contributions. For the same reasons, therefore, the Court should reject Defendants' constructions.

There does exist, however, at least one significant difference. Importantly, Defendants' claim differentiation argument does not apply to the terms in the '365 Patent. There are no dependent claims in the '365 Patent that include the SIP URL and contact address limitations, as there are in the '617 Patent. Claim differentiation is thus irrelevant to these terms. Moreover, contrary to Defendants' contentions, their constructions do not "give effect" to the meaning of "necessary data"—they impermissibly broaden the meaning. As explained above, the word "used" would swallow "subscription data" along with the inventive concept underlying the '365 Patent's claims. Huawei's constructions are supported by the specification and do give effect to the words claiming the applicants' inventions. Accordingly, the Court should adopt Huawei's constructions.

C. “is error”

Huawei proposes, and the ’339 Patent supports, correcting this term to mean “is invalid.” Defendants readily admit that “is error” is an error clear from the face of the patent, and that “there is no dispute that the [’339 Patent] *relates to* recovery of an *invalid* tunnel.”¹ Defs. Br. at 12. They do not dispute that Huawei’s proposal is a reasonable correction. That should be the end of the dispute; instead, Defendants manufacture a debate as to the appropriate correction. To do so, Defendants fabricate an interpretation in which “if a user plane using a One Tunnel technology is error” is changed to “if a user plane corresponding to the error indication uses a One Tunnel technology.” *Id.* at 11. This “correction” requires injecting five words to the phrase and deleting two, whereas Huawei’s construction would simply change one word: “error” to “invalid.”

Defendants’ proposal is neither reasonable nor apparent from the claim language. Rather, Defendants’ proposed interpretation improperly extrapolates a particular embodiment of the invention and engrafts it onto this simple typographical error. Defendants assert that their interpretation is supported by the specification’s reference to the core network user plane anchor “determining that the user plane corresponding to the error indication uses a One Tunnel technology.” ’339 Patent at 3:65-4:3. But the referenced error indication simply indicates that the user plane *is invalid*. *See id.* at 3:15-27; Pltf. Br. at 19-20. Thus, Defendants’ interpretation is simply another way repeating what the claim already says (as corrected with Huawei’s proposal). Defendants’ proposal applies significant changes to the claim language to insert an additional limitation. Instead, the Court can and should just replace “error” with “invalid,” as Huawei proposes, the Defendants concede is a proper correction, and the patent supports.

¹ Defendants’ expert, Mr. Lanning, also concedes that (1) there is a “clear error in the claim language,” and (2) Huawei’s construction is reasonable. Def. Br., Ex. A at ¶ 17-18. He also seems to concede that Defendants’ proposal would import limitations from the specification. *Id.* at ¶ 18.

D. Alleged Means-Plus-Function Terms²

1. *Defendants have not overcome the presumption against “means-plus-function.”*

Defendants have not overcome the presumption against “means-plus-function” because they have not refuted Huawei’s contention that the claimed and described functions of the unit terms are sufficient to prescribe structure for the terms. As an initial matter, in their recently-filed Petition for Inter Partes Review, Defendants do not contend that these terms are subject to 35 U.S.C. § 112 and indefinite, but rather that the proper interpretation for the terms is “hardware or software for [receiving/sending/storing] data.” Petition at 23-24 (attached as Ex. B). This argument directly contradicts their position before this Court. It has long been settled law that there is no distinction made between prosecution in the PTO and enforcement in the courts for determining whether a term is subject to 35 U.S.C. § 112. *In re Donaldson Co., Inc.*, 16 F.3d 1189, 1193 (Fed. Cir. 1989) (en banc).

Nevertheless, the unit terms here are similar to the “component” terms that were at issue in *E2E Processing, Inc. v. Cabela’s Incorporated*, No. 2:14-cv-36, 2015 WL 4051423 (E.D. Tex. July 2, 2015) (Payne, M.J.). In *E2E*, the terms the defendant sought to establish as means-plus-function all included the word “component.” This Court recognized that “component” was a “nonce” word, but nonetheless recognized the component terms as imparting structure for two reasons. First, “the ‘prefix’ that appears before a purported nonce word may impart structural meaning,” and the Court found such prefix words sufficient in *E2E* to steer clear of means plus function treatment. *Id.* at *6 (citing *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1351 (Fed.

² Defendants did not timely disclose these allegedly “means-plus-function” under P.R. 3-3 and P.R. 4-1. (See Dkt. No. 110.) Defendants have moved for leave to amend their disclosures for good cause, but good cause does not exist. (See *id.*) Nonetheless, Huawei provides this argument in support of alternative constructions in the event the Court grants Defendants’ motion for leave to amend.

Cir. 2015)). Second, the specification provided the “inputs and outputs” and how the component terms “interact[] with other components . . . in a way that . . . inform[s] the structural character of the limitation[s]-in-question or otherwise impart[s] structure.” *Id.* (quoting *Williamson*, 792 F.3d at 1351). In particular, each component term had, in the specification, a sentence or two that described what the components were to do. *See id.* at *5-7. With this intrinsic record, Judge Payne found these sentences to impart sufficient structure to the terms and, accordingly, found the component terms were not subject to § 112, ¶ 6. *See id.*

Those same two reasons apply here to bar Defendants’ attempt to overcome the presumption against means-plus-function. First, although Defendants characterize “unit” as a nonce term, a person of ordinary skill in the art would understand the prefixes of these terms (*i.e.*, sending, receiving, storage) to impart structural meaning. *See id.* at *6; Decl. of Nettleton, at ¶ 34 (attached as Ex. A). As Huawei explained in its opening brief, “[t]he ‘receiving unit’ receives, the ‘sending unit’ sends, and the ‘storage unit’ updates.” Pltf. Br. at 26. A person of ordinary skill would understand these words in the claims “to have a sufficiently definite meaning as the name for structure.” *Williamson*, 792 F.3d at 1348; Ex. A at ¶ 34. In fact, Defendants admit that these terms relate to components found within network elements (*e.g.*, GGSN/MME or SGSN) within a packet core network, and a person of ordinary skill in the art would understand the components within those elements to have specific structure. *See* Def. Br. at 18; Ex. A at ¶ 35; *Chrimar Sys., Inc. v. Adtran, Inc.*, No. 6:15-cv-618-JRG-JDL, 2016 WL 3382028, at *9 (E.D. Tex. June 20, 2016) (“Where a claim term has an understood meaning in the art, it recites sufficient structure.”).

Second, much like the component terms in *E2E*, the unit terms here are described within the context of their inputs, outputs, and interactions with other units in ways that inform the character of these limitations. *See E2E*, 2015 WL 4051423 at *6. One important distinction in Huawei’s favor here is that in *E2E*, the component terms’ descriptions were in the specification;

here, the inputs/outputs/interactions of the unit terms are in the claims themselves, *see* Pltf. Br. at 24-25, thus making this record even stronger for Huawei than the record for the patent owner in *E2E*. The specification further supports the character of these limitations because it describes the functionality of the unit terms and depicts their arrangement within the claimed invention. *See id.* at 24. Accordingly, Defendants have not overcome the presumption against § 112, ¶ 6.

2. *The '339 Patent recites sufficient structure for the terms.*

The Court need not reach the second part of the § 112, ¶ 6 if the Court agrees that, as explained above and in Huawei's opening brief, the unit terms are not means-plus-function. *See Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1296-97 (Fed. Cir. 2014) (noting that the inquiries for whether a term is a means-plus-function term and whether a term found to be means-plus function has corresponding structure are distinct). Nonetheless, if the Court proceeds to the second step of the analysis, the unit terms do have sufficient structure within the '339 Patent. Importantly, what is claimed here is a **communication device** configured to receive, send, and update in an inventive **arrangement** within the network—not any inventive mechanism underlying its receiving, sending, or storage units. *See Chrimar*, 2016 WL 3382028, at *9. The focus of the invention thus is not on the inside of the claimed units, but on what inputs and outputs they receive, send, or store, and how they interact with each other within the claimed communication device. *See, e.g., IMS Tech., Inc. v. Haas Automation, Inc.*, 206 F.3d 1422, 1436 (Fed. Cir. 2000) (when addressing equivalent structures for infringement purposes, finding that if the “physical structure is of little or no importance to the claimed invention, there may be a broader range of equivalent structures than if the physical characteristics of the structure are critical in performing the claimed function in the context of the claimed invention. Thus, a rigid comparison of physical structures in a vacuum may be inappropriate in a particular case.”).

Accordingly, the only authority Defendants rely upon in arguing that there is insufficient structure is distinguishable. In *Selex Communications, Inc. v. Google Inc.*, the plaintiff pointed to “black box” figures in the specification as the structure for the claimed functions. No. 1:09-cv-2927-TWT, 2013 WL 1412334, at *5 (N.D. Ga. Apr. 8, 2013). Not only were the claimed functions not readily understood functions, but also they actually went to the heart of the claimed inventions. *See id.* (discussing “capturing” and “evaluating” phone numbers in a patent directed to minimizing incurred charges by the remote origination of telephone calls). The specification did not explain how they were to be performed, or what inputs/outputs/interactions they required. *See id.*

By contrast, here, Defendants cannot plausibly argue that the requisite circuitry or algorithm is more complex than the claimed functions themselves—receiving, storing, or updating. They are simple components that a person of ordinary skill in the art would readily how they work within the claimed communication devices (*e.g.*, GGSN/MME or SGSN/S-GW). *See* Ex. A at ¶¶ 35-36. A person of ordinary skill in the art would only need to understand that the receiving unit receives, the sending unit sends, and the storage unit updates, and that they interact in the claimed manner. The patent explains that these units may be implemented with software or hardware within the device. ’339 Patent, 11:23-35; Ex. A at ¶ 37. Therefore, the ’339 Patent recites sufficient structure for the unit terms, and the Court should not find the terms indefinite.

E. “notifying, by the core network user plane anchor, a core network control plane to recover a downlink data tunnel” | “notification from a core network user plane anchor to recover a downlink data tunnel” | “notify a core network control plane to recover a downlink data tunnel” | “notification”

Huawei proposes that the “notify” terms be construed to replace “notify/notification” with “instruct/instruction.” Defendants admit to the spirit behind Huawei’s constructions but confusingly refuse to admit to the constructions themselves. Defendants state that their constructions would require the “notification message [be] sent ‘to recover’ the downlink tunnel.”

Defs. Br. at 22. This statement comports with Huawei’s proposed constructions, which clarify the meaning of “notify” to “instruct” so that the parties, the jury, and the Court all understand that the message to the core network control plane is not simply a notification that a recovery should ensue but rather an affirmative directive to the core network control plane to effect the requested recovery. *See* Pltf. Br. at 16. Nonetheless, Defendants refuse to accept Huawei’s constructions.

The reasoning behind Defendants’ refusal is flawed. Defendants claim that Huawei’s constructions might confuse the jury because there would be an ambiguity as to whether the request by the core network user plane anchor to recover would “constitute an ‘instruction . . . to recover’ or a ‘notification . . . to recover.’” Defs. Br. at 23. The opposite is true. If the Court adopts Huawei’s constructions and construes “notify” to mean “instruct,” the jury would clearly understand that Defendants’ cited “request” constitutes an instruction, not simply a notification. Defendants’ construction risks emphasizing to the jury the “notify” or “notification” aspect of the term while minimizing the “to recover” portion of the term. Huawei’s proposal—using “instruct”—properly tells the jury of the importance that a recovery is actively being directed.

Moreover, the specification citations upon which Defendants rely are consistent with Huawei’s constructions. In the ’339 Patent’s Abstract, the language “notifies . . . to request recovering” confirms Huawei’s interpretation that the message from the core network user plane anchor to the core network control plane is not just a passive notification of an error, but an affirmative direction to recover the downlink data tunnel. The former does not simply inform the latter of the need for a recovery; it actively commands the recovery process to occur. The same is true of the “user plane setup request” embodiment described in the patent: the core network user plane anchor requests recovery of the downlink data tunnel—it does not simply make the core network control plane aware of an error. *See* ’339 Patent at 9:11. Accordingly, the specification supports Huawei’s constructions, and Huawei respectfully requests that the Court adopt them.

II. CONCLUSION

For the foregoing reasons, Huawei respectfully requests that its positions be adopted.

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Respectfully submitted,

By: /s/ David Barkan

Ruffin Cordell

Texas Bar No. 04820550

cordell@fr.com

Linda Kordziel

DC Bar No. 446386

kordziel@fr.com

Richard A. Sterba

DC Bar No. 461417

sterba@fr.com

FISH & RICHARDSON P.C.

1425 K Street, N.W., 11th Floor

Washington, D.C. 20005

Telephone: (202) 783-5070

Facsimile: (202) 783-2331

Thomas H. Reger II

Texas Bar No. 24032992

reger@fr.com

Carl E. Bruce

Texas Bar No. 24036278

bruce@fr.com

David B. Conrad

Texas Bar No. 24049042

conrad@fr.com

Jane Du

Texas Bar No. 24076355

du@fr.com

FISH & RICHARDSON P.C.

1717 Main Street, Suite 5000

Dallas, TX 75201

Telephone: (214) 747-5070

Facsimile: (214) 747-2091

David Barkan

California Bar No. 160825

barkan@fr.com

FISH & RICHARDSON P.C.

500 Arguello Street, Suite 500

Redwood City, CA 94063

Telephone: (650) 839-5070

Facsimile: (650) 839-5071

Kevin Su
Massachusetts Bar No. 663726
su@fr.com
FISH & RICHARDSON P.C.
One Marina Park Drive
Boston, MA 02210
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

**COUNSEL FOR PLAINTIFF HUAWEI
TECHNOLOGIES CO. LTD.**

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing document has been served on February 14, 2017 to all counsel of record who are deemed to have consented to electronic service via the Court's CM/ECF system per Local Rule CV-5(a)(3).

/s/ David Barkan
David Barkan